# PHASE I CULTURAL RESOURCES RECONNAISSANCE SURVEY OF A PROPOSED CELLULAR COMMUNICATIONS FACILITY AT 12 ORCHARD DRIVE, LEDYARD, CONNECTICUT

PREPARED FOR:

EBI CONSULTING, INC. FOUR A STREET BURLINGTON, MA 01803



HERITAGE CONSULTANTS, LLC 877 MAIN STREET NEWINGTON, CONNECTICUT 06111

### TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	PROJECT DESCRIPTION	
3.0	BACKGROUND RESEARCH	1
4.0	PROJECT CONTEXT: PREVIOUS INVESTIGATIONS, NATURAL & PREHISTORIC SETTINGS, AND HISTORIC OVERVIEW	2
	4.1 Natural Setting	
	4.2 Prehistory of Connecticut	
	4.3 History of the Proposed Project Region	6
	4.4 Previous Investigations	8
5.0	FIELD METHODS	8
6.0	CURATION	9
7.0	RESULTS OF THE INVESTIGATION	9
	Locus 1,	9
	Locus 2	
8.0	SUMMARY AND MANAGEMENT RECOMMENDATIONS	10

#### LIST OF FIGURES

Excerpt from the 1989 digital 7.5' series USGS topographic quadrangle, Uncasville, Figure 1 Connecticut, depicting the location of the Areas of Potential Effect. Plan view of the Areas of Potential Effect depicting proposed facilities, existing Figure 2. structures, and excavated shovel tests. Overview photo of the proposed lease area, facing southwest (note: this area contains the Figure 3. southern extent of Locus 1 in the vicinity of the stake marking the northeast corner of the proposed lease area. Overview photo of the proposed lease area, facing northwest. Figure 4. Overview photo of the proposed lease area, facing southeast. Figure 5. Overview photo of the proposed lease area, facing northeast. Figure 6. Overview photo of the east central portion of the proposed access road, facing northwest. Figure 7. Overview photo of the central portion of the proposed access road, facing west. Figure 8. Overview photo of the west central portion of the proposed access road, facing south Figure 9. Overview photo of the western end of the proposed access road, facing west. Figure 10. Overview photo of the eastern end of the proposed access road, facing north (note: this Figure 11. area contains Locus 1). Overview photo of the western half of the proposed buried utility easement, facing west Figure 12. (note: this area contains Locus 2). Digital map of the project region depicting the locations of the Areas of Potential Effect, Figure 13. Mashantucket Pequot Reservation and Mohegan Reservation. Excerpt from an 1854 map depicting the location of the Areas of Potential Effect. Figure 14. Excerpt from an 1868 map depicting the location of the Areas of Potential Effect. Figure 15. Figure 16. Excerpt from the 1892 USGS topographic quadrangle depicting the location of the Areas of Potential Effect. Excerpt from a 1934 aerial image depicting the location of the Areas of Potential Effect. Figure 17.

Excerpt from the 1941 USGS topographic quadrangle aerial image depicting the location

Figure 18.

of the Areas of Potential Effect.

- Figure 19. Excerpt from a 1970 aerial image depicting the location of the Areas of Potential Effect.
- Figure 20. Digital map of the project region depicting the location of previously recorded archaeological sites.

#### 1.0 Introduction

This report summarizes the results of a Phase I cultural resources reconnaissance survey of a proposed cellular communications facility to be constructed within a parcel of land owned by Holmberg Orchards; the parcel is situated at 12 Orchard Drive in Ledyard, Connecticut. Heritage Consultants, LLC, completed the field investigation portion of this project, performed on behalf of EBI Consulting, Inc., on November 27, 2005. All work was conducted in accordance with the National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969, as amended; and the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987). The remainder of this document presents a description of the Areas of Potential Effect, information used as project context, the methods by which the current Phase I cultural resources reconnaissance survey was completed, results of the investigation, and management recommendations for the project.

#### 2.0 Project Description

As mentioned above, the proposed cellular communications facility will be located in Ledyard, Connecticut (Figure 1). The Areas of Potential Effect, which consist of a single access road measuring approximately 406 m (1,134 ft) in length, a buried utility cable measuring approximately 205 m (675 ft) in length, and a single lease area measuring approximately 15 x 15 m (50 x 50 ft) in size, are situated at approximate elevations ranging from 30 to 47 (100 to 155 ft) NGVD; they are bounded to the north, east, and west by an apple orchard and to the south forested land (Figure 2). The Area of Potential Effect associated with the proposed lease area will contain a proposed cellular communications tower, a gang meter bank, a battery cabinet, and a transformer. These project items will be enclosed and protected by a proposed chain link fence and protective bollards. At the time of survey, the proposed lease area was characterized by a mixture of orchard and brush; the area also was characterized by previously dumped debris consisting or brush, tree branches, soil, and large stones and boulders (see Figures 3 through 6).

In addition, with the exception of the final 70 m (225 ft), the proposed access road consisted of an extant gravel and asphalt thoroughfare (see Figures 7 through 10); thus, only the final 70 m (225 ft) leading to the proposed lease area was subjected to subsurface testing. This area consisted of an open two track dirt road (Figure 11). The remainder of the access road was reconnoitered visually and subjected to photo-documentation. Finally, according to the landowner, Mr. Holmberg, the western 55 m (180 ft) of the proposed buried utility easement has been graded and contains a septic field (Figure 12); that area was not subjected to subsurface testing. The remainder of the buried utility easement was situated within a manicured lawn, and it was examined using subsurface testing techniques (see below).

Despite the fact that the planned facilities are located in close proximity to areas that have been previously impacted by construction (e.g., roads, buildings, septic systems) and modern dumping, the undisturbed portions of the Areas of Potential Effect were surveyed using close interval shovel testing in an effort to identify evidence of intact cultural deposits. Field methodologies employed during the current investigation consisted of pedestrian survey, mapping, photo-documentation, and subsurface testing throughout the Areas of Potential Effect. This approach was requested by the Mashantucket Pequot Tribe, which has close cultural affinities with the project region, and it was in keeping with survey guidelines described in the document entitled *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987). The details of the field methods, as well as the results of this field effort, are reviewed below.

#### 3.0 Background Research

The current Phase I cultural resources reconnaissance survey was completed using a three-step approach. The first step consisted of historic research and records review that focused on the portion of Ledyard encompassing the Areas of Potential Effect. This was followed by a review of all previously recorded archeological sites and/or National Register of Historic Places properties situated within the vicinity of the project area in an effort to determine the archeological context of the region. Finally, this approach

entailed the completion of fieldwork associated with the current Phase I cultural resources reconnaissance survey.

Background research included analysis of readily available historic maps and aerial imagery depicting the area encompassing proposed project area; an examination of the pertinent 1983 USGS 7.5' series topographic quadrangle; and a review of all archeological and National Register of Historic Places property data maintained by the Connecticut State Historic Preservation Office and digital records archived by Heritage Consultants, LLC. The intent of this review was to identify all previously recorded cultural resources situated within and/or immediately adjacent to the Areas of Potential Effect. This information was used to develop the archeological context for assessing cultural resources that may be identified during survey.

## 4.0 Project Context: Previous Investigations, Natural & Prehistoric Settings, and Historic Overview

The following sections provide an overview of the region's natural and prehistoric settings, historic backdrop, and previous cultural resources investigations completed within the vicinity of the Area of Potential Effect. These brief discussions are included in an effort to provide contextual information relative to the location of the Area of Potential Effect, its natural characteristics, and its prehistoric and historic use and occupation. It concludes with an overview of the previous cultural resources investigations that have taken place in the area and a discussion of their results.

#### 4.1 Natural Setting

The Areas of Potential Effect are located within the Southeast Hills ecoregion of Connecticut, which consists of a near coastal upland region located within close proximity to the Long Island Sound. This region is characterized by low, rolling to locally rugged hills of moderate elevation, broad areas of upland, and areas of rugged topography. The bedrock of the region is primarily metamorphic in origin, with north trending belts of Paleozoic gneisses and schists present. Soils in this ecoregion have developed on top of glacial till in upland locales, and on top of stratified deposits of sand, gravel, and silt in the local valleys. The closest large river to the project area is the Thames River, which is a tidal in the vicinity of the Areas of Potential Effect. The other large body of water located in the vicinity of the Areas of Potential Effect is Poquetanuck Cove, which is an offshoot of the Thames River and which is known to have been used prehistorically by Native Americans as a settlement area and for the extraction of seasonally abundant resources (e.g., various fish, reptile, bird, and shellfish species).

The Town of Ledyard is situated within the Thames River Watershed, which drains portions of Ledyard, Preston, Mystic, Stonington, North Stonington, Montville, and Norwich, among others. In addition to a variety of small streams, the project region contains numerous woodlands, pastures, rivers, small lakes, and wetlands. Vegetation within the immediate vicinity of the Areas of Potential Effect consists of apple trees associated with the Holmberg apple orchards and mixed deciduous forests. Finally, local fauna include brown trout, shad, alewives, American eel, cunner, winter flounder, striped bass, rabbit, squirrel, raccoon, fox, opossum, deer, various snakes and turtles, and a wide variety of terrestrial and aquatic bird species. This brief overview indicates that the flora and fauna of the proposed project region is not only diverse in nature, but also could have been put to a multitude of uses by both prehistoric and historic inhabitants of the region. The vegetation provided not only sustenance, but raw materials for commodities, tools, and fires.

#### 4.2 Prehistory of Connecticut

The earliest inhabitants of Connecticut, referred to as Paleo-Indians, probably arrived in the area after ca. 14,000 B.P. (Gramly and Funk 1990; Snow 1980). While there have been numerous finds of Paleo-Indian projectile points throughout Connecticut, only two sites, the Templeton Site (6-LF-21) and the Hidden Creek Site (72-163), have been studied in detail (Jones 1997; Moeller 1980). The Templeton Site (6-LF-

21) is located in Washington, Connecticut on a terrace overlooking the Shepaug River. Carbon samples recovered during excavation of the site area produced a radiocarbon date of 10,190±300 B.P., for the occupation. In addition to a single large and two small fluted points, the Templeton Site produced gravers, drills, core fragments, scrapers, and channel flakes, indicating that the full range of lithic reduction took place within the site area (Moeller 1980). Moreover, use of both exotic and local raw materials was documented in the recovered lithic assemblage, suggesting that not only did the site's occupants spend some time in the area, but they also had access to distant lithic sources.

The only other Paleo-Indian site studied in detail is the Hidden Creek Site (72-163) (Jones 1997). Paleo-Indian artifacts recovered from this site include bifaces, side scrapers, a fluted preform, gravers, and end scrapers. While no direct date for the Paleo-Indian assemblage yet has been obtained, Jones (1997:76) argues that based on typological considerations the artifacts likely date from ca., 10,000 to 9,500 years ago. Further, based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represents a short-term occupation. Excavation of both sites suggest that the Paleo-Indian settlement pattern consisted of a high degree of mobility, with groups moving regionally in search of seasonal food resources, as well as for high quality lithic materials.

The Archaic Period began by ca., 10,000 B.P. (Ritchie and Funk 1973; Snow 1980). Later, Griffin (1967) and Snow (1980) divided the Archaic Period into three subperiods: the Early Archaic (10,000 to 8,000 B.P.), Middle Archaic (8,000 to 6,000 B.P.), and Late Archaic (6,000 to 3,400 B.P.). To date, very few Early Archaic sites have been identified in southern New England. Like Paleo-Indian sites, Early Archaic sites tend to be very small and produce few artifacts, most of which are not diagnostic. Sites of this age are identified based on the recovery of a series of ill-defined bifurcate-based projectile points. These projectile points are identified by their characteristic bifurcated base, and they generally are made from high quality lithics, though some quartz and quartzite specimens have been recovered. Current archeological evidence suggests that Early Archaic groups became more focused on locally available and smaller game species. Occupations of this time period are represented by camps that were moved periodically to take advantage of seasonal resources (McBride 1984).

By the onset of the Middle Archaic Period, increased numbers and types of sites are noted in the region (McBride 1984). The most well known Middle Archaic site in New England is the Neville Site (Dincauze 1976). Analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca., 7,700 and 6,000 years ago. These sites are associated with the recovery of Neville, Stark, and Merrimac projectile points. McBride (1984) noted that Middle Archaic sites in the lower Connecticut River Valley tend to be represented by moderate density artifact scatters representing a "diversity of site types, with both large-scale occupations and small special purpose present" (McBride 1984:96). Thus, based on the available archeological evidence, the Middle Archaic Period is characterized by continued increases in diversification of resources exploited, as well as by sophisticated changes in the settlement pattern to include different site types, including both base camps and task-specific sites (McBride 1984:96).

The Late Archaic Period in southern New England is divided into two major cultural traditions: the Laurentian and Narrow-Stemmed Traditions (Funk 1976 McBride 1984; Ritchie 1969a and b). Laurentian artifacts include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights and scrapers. The diagnostic projectile point forms of this time period include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a). Current archeological evidence suggests that Laurentian populations consisted of groups of mobile huntergatherers. While a few large Laurentian Tradition occupations have been identified and studied, they generally encompass less than 500 m² in area. These base camps reflect frequent movements by small groups of people in search of seasonally abundant resources. The overall settlement pattern of the Laurentian Tradition was dispersed in nature, with base camps located in a wide range of microenvironments, including riverine as well as upland zones (McBride 1984:252).

The latter portion of the Late Archaic is represented the Narrow-Stemmed Tradition. It is recognized by the presence of quartz and quartzite narrow stemmed projectile points, triangular quartz Squibnocket projectile points, and a bipolar lithic reduction strategy (McBride 1984). In general, the Narrow-Stemmed Tradition corresponds to when Late Archaic populations in southern New England began to "settle into" well-defined territories. Further, Narrow-Stemmed Tradition settlement patterns are marked by an increase in the types of sites utilized. That is, the Narrow-Stemmed Tradition witnessed the introduction of large base camps supported by small task-specific sites and temporary camps. The increased number of Narrow Stemmed Traditions temporary and task specific sites indicates frequent movements out of and back into base camps for the purpose of resource procurement; however, the base camps were relocated seasonally to position groups near frequently used, but dispersed, resources (McBride 1984:262).

The Terminal Archaic, which lasted from ca., 3,700 to 2,700 B.P., is represented by the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and associated artifacts. Temporally diagnostic projectile points of this tradition include the Snook Kill, Susquehanna Broad, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). In addition, the material culture of the Terminal Archaic includes soapstone vessels, chipped and ground stone adzes, atlatl weights, drills, net sinkers, plummets and gorgets (Lavin 1984; McBride 1984; Ritchie 1969a and 1969b; Snow 1980). Susquehanna Tradition settlement patterns are centered around large base camps located in on terrace edges overlooking floodplains. Acting as support facilities for the large Terminal Archaic base camps were numerous task specific sites and temporary camps. Such sites were used as extraction points for the procurement of resources not found in the immediate vicinity of the base camps, and they generally were located adjacent to upland streams and wetlands (McBride 1984:282). Finally, there also are a large number of Terminal Archaic cremation cemeteries with burials that have produced broadspear points and radiocarbon dates between 3,700 and 2,700 B.P. (Pfeiffer 1990). Among the grave goods are ritually "killed" (intentionally broken) steatite vessels, as well as ground stone and flaked stone tools (Snow 1980:240); however, this represents an important continuation of traditions from the Late Archaic and it should not be regarded as a cultural trait unique to the Susquehanna Tradition (Snow 1980:244).

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been commonly divided into three subperiods: Early, Middle, and Late Woodland. The Early Woodland period of the northeastern United States dates from ca., 2,700 to 2,000 B.P. In his study of the lower Connecticut River Valley, McBride (1984) described Early Woodland sites as "characterized by a quartz cobble lithic industry, narrow-stemmed points, an occasional Meadowood projectile point, thick, cord-marked ceramics, and perhaps human cremations" (McBride and Soulsby 1989:50). Early Woodland sites tend to be located in a variety of different ecozones; however, the largest settlements associated with this period were focused on floodplain, terrace, and lacustrine environments (McBride 1984:300), suggesting "population aggregations along major rivers, interior lakes, and wetlands" (McBride and Soulsby 1989:50). In sum, archeological evidence indicates that Early Woodland populations consisted a mobile hunter/gatherers that moved seasonally throughout a diversity of environmental zones in search of available plant and animal resources.

The Middle Woodland Period of southern New England prehistory is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). In Connecticut, the Middle Woodland Period is represented archeologically by the use of narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types indicative of the Middle Woodland period include Linear Dentate, Rocker Dentate, Windsor Cord

Marked, Windsor Brushed, Windsor Plain, and Hollister Stamped (Lizee 1994a: 200). In terms of settlement patterns, the Middle Woodland period is characterized by the occupation of village sites by large co-residential groups. These sites were the principal place of occupation, and they were positioned in close proximity to major river valleys, tidal marshes, estuaries, and the nearby coastline, all of which would have supplied an abundance of plant and animal resources (McBride 1984:309). In addition to villages, numerous temporary and task-specific sites were utilized in the surrounding upland areas, as well as in closer ecozones such as wetlands, estuaries, and floodplains.

The Late Woodland period in southern New England dates from ca., 1,200 to 350 B.P., and it is characterized by the earliest evidence for the use of maize in the lower Connecticut River Valley (Bendremer 1993; Bendremer and Dewar 1993; Bendremer et al. 1991; George 1997; McBride 1984); an increase in the frequency of exchange of non-local lithics (Feder 1984; George and Tryon 1996; McBride 1984; Lavin 1984); increased variability in ceramic form, function, surface treatment, and decoration (Lavin 1980, 1986, 1987; Lizee 1994a, 1994b); and a continuation of a trend towards larger, more permanent settlements in riverine, estuarine, and coastal ecozones (Dincauze 1973, 1974; McBride 1984; Snow 1980). Late Woodland lithic assemblages typically contain up to 60 to 70 percent exotic lithics. Finished stone tools include Levanna and Madison projectile points; drills; side-, end-, and thumbnail scrapers; mortars and pestles; nutting stones; netsinkers; and celts, adzes, axes, and digging tools (McBride 1984; Snow 1980). In addition, ceramic assemblages recovered from Late Woodland sites include Windsor Fabric Impressed, Windsor Brushed, Windsor Cord Marked, Windsor Plain, Clearview Stamped, Sebonac Stamped, Selden Island, Hollister Plain, Hollister Stamped, and Shantok Cove Incised types (Lavin 1980; Lizee 1994a; Pope 1953; Rouse 1947; Salwen and Ottesen 1972; Smith 1947).

Finally, McBride (1984:323-329) characterized Late Woodland settlement patterns as more nucleated than the preceding Middle Woodland ones, with fewer, larger sites situated in estuarine and riverine ecozones. Both river confluences and coastal zones were favored areas for the establishment of large village sites that contain numerous hearths, storage pits, refuse pits, ceramic production areas, house floors, and human and dog burials (Lavin 1988b; McBride 1984). McBride (1984:326) has argued that these sites certainly reflect multi-season use, and were perhaps occupied on a year-round basis (see also Bellantoni 1987). In addition to large village sites, McBride (1984:326) identified numerous temporary and task-specific sites in the uplands of the lower Connecticut River Valley and along the coastline. These sites likely were employed for the collection of resources such as plant, animal, and lithic raw materials. These sites tend to be very small, lack internal organizational structure, and usually contain a limited artifact assemblage and few cultural features, suggesting that they were occupied from only a few hours to perhaps overnight. Temporary camps, on the other hand reflect a longer stay than task-specific camps, perhaps on the order of a few days to a week, and they contain a more diverse artifact assemblage indicative of more on-site activities, as well as more features (McBride 1984:328-329). In sum, settlement patterns of the Late Woodland period are characterized by "1) aggregation in coastal/riverine areas; 2) increasing sedentism, and; 3) use of upland areas by small task groups of individuals organized for specific tasks" (McBride 1984:326).

In sum, the prehistory of Connecticut spans from ca., 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence pattern, and land use strategies. For the majority of the prehistoric era, local Native American groups practiced a subsistence pattern based on a mixed economy of hunting and gathering wild plant and animal resources. It is not until the Late Woodland period that incontrovertible evidence for the use of maize horticulture as an important subsistence pursuit is available. Further, settlement patterns throughout the prehistoric era shifted from seasonal occupations of small co-residential groups to large aggregations of people in riverine, estuarine, and coastal ecozones. In terms of the region containing the proposed project parcel, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.

#### 4.3 History of the Proposed Project Region

The Town of Ledyard was divided from Groton in 1836, the latter having separated from New London in 1705. All three of these towns lie within the region taken from the Pequot Indians in 1637 during the war prosecuted against them by the Massachusetts Bay Colony, the Connecticut Colony, and the Narragansett and Mohegan Indians. As a result of the joint nature of the war, the question of which colony had jurisdiction over the conquered area was a problem. This issue was resolved in 1658 by dividing the land between the Massachusetts Bay and Connecticut Colonies at the Mystic River, with the Connecticut Colony retaining the land on the west side of the river, including what would later become New London and its daughter towns. The Massachusetts Bay Colony claimed jurisdiction to those areas situated to the east side of the Mystic River.

This portion of the state was first surveyed by the Connecticut Colony in 1641, and several grants of land to various private citizens and governmental representatives were made in 1642 and later (Crofut 1937). Although most histories have long claimed that the Pequot tribe was entirely destroyed during the Pequot War, in fact numerous surviving members of the tribe were placed under the stewardship of the Narragansett and Mohegan tribes by the Connecticut Colony as a result of the Treaty of Hartford, which was signed in 1638. Dissatisfied with their treatment by the Narragansett and Mohegan tribes, two groups of Pequots slowly reconstituted themselves as separate entities. In the 1660s, their desire for land to settle on resulted in a grant to one group of 2,000 acres in New London, in the part of the town that would eventually become Ledyard (Campisi 1990). The western limits of this land grant, currently known as the Mashantucket Pequot Reservation, is situated approximately 3.5 mi to the east of the Areas of Potential Effect. In addition, the Mohegan tribe, which also was granted reservation lands, is located approximately 2.5 mi to the northwest of the Areas of Potential Effect, on the other side of the Thames River (Figure 13).

The first white settlement in the conquered territory, which would become New London, was established on the west side of "Pequod River" (later known as the Thames River) in 1646. This settlement was recognized by the General Court of Connecticut in 1648. The section of the so-called Pequot Country that became known as Groton (and later Ledyard) is bounded by the Thames River on the west and the Mystic River on the east. The first reported settlement on the east side of the Thames River followed grants from the General Court to plots of land at Peqounuck and Groton Bank. These lands were divided among 22 grantees in 1649. At that time, the town that was still known as Pequot (it was not renamed New London until 1658), and it included land on both sides of the Thames. In 1705, just over 50 years later, the land on the east side of the Thames River was incorporated into a new town called Groton. Farms known as the "Pocketannock Grants" were laid out in 1653 on the northern boundary of what would become Ledyard. These areas were established near a farm and trading post built before 1650 at Brewster's Point on the Thames River. The historic Poquetanuck village, however, is located in Preston; it was established 1687. The Areas of Potential Effect are situated near the southeastern side of Poquetanuck Cove (Figure 1), which is located near, but not within, the earliest settlements in the district.

Settlement of the Ledyard area continued steadily throughout the eighteenth century. The majority of European settlement in the area during this period of time was characterized by dispersed agricultural farmsteads. By 1830, the European population of the entire Groton area, including the Town of Ledyard, had reached 4,805 people. The Groton area was the second most populous region in New London County at that time (Barber 1836), and Groton Center became a stopping point along the east-west running Providence-New London Turnpike. This area developmed into an important center because it also was situated along the north-south trending Norwich-Groton Road (Stark 1922). These two primary transportation routes provided access for the local farmers to market centers in New London, New Haven, and Norwich, as well as Providence, Rhode Island. In addition to shipbuilding and fishing, which were the primary economic pursuits of residents living in the southern portion of Groton, agricultural activities,

including dairying and lumbering, continued to be the focus of the inhabitants of North Groton and the Ledyard area.

By the early 1800s, the area encompassing North Groton and the Areas of Potential Effect had reached approximately 2,000 individuals (Barber 1836). This area was officially incorporated as the separate town of Ledyard in 1836. Its boundaries were described as follows: to the north by the Town of Preston, to the east by the Towns of Stonington and North Stonington, to the south by the Town of Groton, and to the west by the Thames River. The principal village of the new town at the time was situated at Gale's Ferry. During the early 1800s, Gales Ferry consisted of little more than 30 dwelling houses and a single meetinghouse (Barber 1836).

The economic and population growth of Ledyard was boosted during the mid-1800s with the arrival of the Norwich and Worcester Railroad in 1840. The railroad included a stop at Allyn Point and then at Norwich, and it ran independently or as a leased line until it succumbed to competition from the highways in the 1920s. Rail freight still ran on the line through the 1980s and probably to the present day (Turner and Jacobus 1989). No turnpikes were laid out through Ledyard, although the Mohegan Road, the first such enterprise, followed the west bank of the Thames River (Wood 1919). The closest named center of settlement within the town of Ledyard (as opposed to Poquetanuck, which is closer but located in Preston) is Gales Ferry. This village developed around a ferry established in 1740 and operated by Ralph Stoddard, Jr., John Hurlbut, and John Comstock. In 1759, the ferry operation was transferred to Roger Gale, whose name was attached to it despite the fact that he only owned it for approximately four years. Later owners of the ferry included John Allyn, Jr. and David and Nathaniel Ledyard, among others (Bell and Smith 1976). Allyn or Allyn's Point, named after John Allyn, Jr., was the location of a house and warehouse built around 1683 (Hughes and Allen 1976).

Readily available historic maps of the project region indicate that the main road from which Orchard Drive originates, was not a major historic thoroughfare. The 1854 county map indicates that houses located nearest to the Areas of Potential Effect were those of Miss E. Aver (perhaps a misspelling of Avery) and S. Stoddard, and even these are not very close to the project area (Figure 14). Undoubtedly there was a minor country road that permitted residents and tradesmen of the region to reach these houses. The situation was much the same according to the 1868 map, where the home of J. Stoddard & L. Maynard are closest to the Areas of Potential Effect (Figure 15). The bridge that can be seen clearly on the modern topographic map first appears on an 1889 United States Coastal Survey chart, which indicates that travel patterns were already changing enough to require the bridge, and associated road, by that year. The 1890s era topographic map shown in Figure 16 also shows the bridge, as well as two small black squares that indicate that the historic houses mentioned above were not close enough to the Areas of Potential Effect to have any direct impact on them. According to a National Bridge Inventory, this bridge carries Route 12 and it was built in 1990 - presumably replacing an earlier structure (Svirsky 2004).

The early development of the bridge is consistent with the increasing need for transportation routes between the shore and the interior of Connecticut, and the state's willingness to overcome even major obstacles for that purpose. Nonetheless, the 1934 aerial photograph (Figure 17) shows that while the area near the bridge, and near the Areas of Potential Effect, still was being farmed, large adjacent areas already had been abandoned and reverted to forest. It also seems to show at least one large field near the Areas of Potential Effect planted in trees, possibly an early apple orchard. The 1941 USGS topographic quadrangle also shows some residential and commercial development in the immediate vicinity of the bridge, including several structures, unimproved roads, and trails (Figure 18). Finally, it is the 1970 aerial photograph, however, that most clearly shows the orchard for which Orchard Drive presumably is named (Figure 19). According to project plans, the proposed cellular communication site name is "Holmberg Orchard," and is owned by the Holmberg family; as might be expected of an orchard in this area, it seems to be a business of considerable age.

In sum, the region surrounding the Areas of Potential Effect has a rich and varied history. The scene of intensive Native American settlements during the prehistoric and Contact periods, this region became homes to numerous entrepreneurs, farmers, small and large businesses, and railroads. The region has witnessed steady development over the last 350 years and, with the recent development of the Mashantucket Pequot and Mohegan Sun Casinos, now is a major tourist destination, as well as home to thousands of local residents. Despite this steady development, historical research revealed that the Areas of Potential Effect itself was not the scene of important historic events. Rather, it was part of the local backdrop of the New London area.

#### 4.4 Previous Investigations

As mentioned above, the current effort also involved an examination of State Historic Preservation Office records as they pertain to previously completed cultural resources surveys and previously identified archeological sites, historic standing structures, and National Register Properties situated within 0.8 km (0.5 mi) of the Areas of Potential Effect (Figure 20). In addition, the electronic site files maintained by Heritage Consultants, LLC also were examined during the course of this investigation. While no cultural resources surveys have been completed within close proximity to the study area, five archeological sites have been identified within 0.8 km (0.5 mi) of the Areas of Potential Effect. These five sites are discussed in numerical order below

A review of archaeological site, historic district, and National Register Properties files maintained by the Connecticut State Historic Preservation Office and Heritage Consultants, LLC revealed that five previously identified archeological sites are located within 0.8 km (0.5 mi) of the Areas of Potential Effect (Figure 13). These of Sites 72-14, 72-16, 72-114, 72-115, and 72-119. Site 72-14, which was recorded by Connecticut Archaeological Survey, Inc., is also known as the Pit Site. It is located on the west side of Route 12 and to the southwest of Poquetanuck Cover. Site 72-14 consists of an unidentified prehistoric occupation of an unspecified size. Site 72-16, which measures approximately 2 ac in size and is situated along Tanager Lane, also was reported by Connecticut Archaeology Survey Inc. The site area produced evidence of temporally non-diagnostic artifacts that were recovered from a shell midden deposit. Site 72-114, also known as the Holmberg Midden Site, was recorded by Dr. Kevin McBride; it was identified near the southeastern potion of Poquetanuck Cover. The site area, which measures approximately 400 sq m in size, yielded temporally diagnostic cultural material dating from the Terminal Archaic, Middle Woodland, and Late Woodland periods. Site 72-115, which consisted of a shell midden deposit situated near the east-central portion of Poquetanuck Cove, is also known as the Calvin Main Site. This site produced cultural material dating from the Terminal Archaic through Late Woodland periods, and it also covered approximately 400 sq m in area. Finally, Site 72-119, which was recorded by Dr. Kevin McBride and named the Poquetanuck Cove Site, consisted of a historic period occupation that was not dated precisely. This rural site, which was identified near the southeastern limits of Poquetanuck Cove measured approximately 200 sq m in size. None of the above-referenced archaeological sites were assessed applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]).

#### 5.0 Field Methods

Following the completion of all background research, the Areas of Potential Effect were subjected to a Phase I cultural resources reconnaissance survey utilizing pedestrian survey, subsurface testing, mapping, and photo-documentation. The sampling strategy was designed to provide thorough coverage of all portions of the Areas of Potential Effect, including the proposed lease area, access road, buried utility easement, and associated facilities. The pedestrian survey portion of this investigation included visual reconnaissance of all areas located within and immediately adjacent to the Areas of Potential Effect, as well as photo-documentation of the proposed project items and their immediate surroundings.

The subsurface testing portion of this investigation involved the excavation of shovel tests in those portions of the Areas of Potential Effect not disturbed substantially by previous impacts (i.e., lease area, the easternmost 70 m (225 ft) the proposed access road, and the easternmost 45 m (150 ft) of the buried utility easement. During survey, each shovel test measured 50 cm (19.7 in) in diameter and each was excavated to a depth of 50 cmbs (19.7 inbs) or until sterile subsoil, glacial till, or immovable objects (e.g., boulders or bedrock) were encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth. Soil characteristics were recorded in the field using Munsell Soil Color Charts and standard soils nomenclature. Finally, each shovel test was backfilled immediately upon completion of the archeological recordation process.

#### 6.0 Curation

Following the completion and acceptance of this Final Report of Investigations, all project drawings, maps, photographs, and field notes will be curated with Dr. Nicholas Bellantoni, Office of Connecticut State Archaeology, Box U-4214, University of Connecticut, Storrs, Connecticut 06269.

#### 7.0 Results of the Investigation

During survey, 19 of 24 (100 percent) planned shovel tests were excavated successfully throughout the previously undisturbed portions of the Areas of Potential Effect. The five planned, but unexcavated shovel tests fell within areas of steep slope (n=1) and thick fill (n=1) associated with the proposed lease area, as well as a previously disturbed septic area (n=3) located within the western limits of the proposed buried cable easement (Figure 2). A typical profile of a shovel test excavated within the confines of the proposed project items contained two strata in profile and it extended to a depth of 50 cmbs (19.7 inbs). Stratum I, which extended from 0 to 30 cmbs (0 to 11.8 inbs) and consisted of a plowzone, was classified of a layer of dark brown (10YR 3/3) loam. Stratum II reached from 30 to 50 cmbs (11.8 to 19.7 inbs) and it was characterized as a deposit of yellow brown (10YR 4/6) loamy sand mixed with gravel.

The current Phase I cultural resources reconnaissance survey resulted in the identification of two non-site cultural resources loci (Locus 1 and Locus 2). Locus 1 was identified during survey of the proposed lease area and associated access road, while Locus 2 was identified during subsurface testing of the eastern limits of the proposed buried cable easement. Each of these non-site cultural resources is discussed below.

#### Locus 1

Locus 1, which consisted of a mulitcomponent artifact scatter dating from the prehistoric and historic periods, was identified during the excavation of shovel tests in the northeastern corner of the proposed lease area and along the adjacent end of the proposed access road (Figures, 2, 3, and 11). Situated at an approximate elevation of 45.7 m (150 ft) NGVD, this non-site cultural resources locus was surrounded by apple trees on the east, north, and west, as well as by mixed deciduous trees and modern dumping debris on the south (Figures 3 and 11). Locus 1 was described as round in ovoid and it encompassed an area that measured approximately 10 x 60 m (33 x 196 ft) in size.

A total of 14 of 16 (88 percent) planned shovel tests were excavated successfully throughout the immediate vicinity of Locus 1 (Figure 2). The two planned but unexcavated shovel tests fell within areas characterized by steep slopes (n=1) and large amounts of debris and fill (n=1). A typical shovel test excavated within the limits of Locus 1 extended to a depth of 50 cmbs (19.7 inbs) and it exhibited two strata in profile. Stratum I, characterized as a deposit of dark brown (10YR 3/3) sandy loam, extended from the surface to 25 cmbs (0 to 9.8 inbs). Underlying Stratum I was Stratum II, a deposit of dark yellowish brown (10YR 4/6) loamy sand mixed with gravel; it continued from 25 to 50 cm (9.8 to 19.7 in) below surface.

Locus 1 represents a field scatter of historic and prehistoric period artifacts. Cultural material recovered from the locus area consisted of a single piece of clear bottle glass, 1 plain whiteware sherd, 1 unidentified metal fragment, 1 quartz chunk, 1 argillite thinning flake, and a single chert thinning flake. All of this material was recovered from Stratum I, a disturbed plowzone deposit.

The archaeological investigation of Locus 1 indicates that this non-site cultural resources locus lacks evidence of substantial intact cultural deposits and/or cultural features. As a result, it was determined that neither the prehistoric nor historic era components of Locus 1 possess research potential or the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-dl). No additional testing of Locus 1 is recommended.

#### Locus 2

Locus 2 consisted of a historic non-site cultural resources locus identified within the eastern limits of the proposed buried cable easement (Figures 2 and 12). This locus produced a single watch identified as costume jewelry fashioned from an unidentified base metal. The watch was recovered from Shovel Test 9 from Stratum II (i.e. the subsoil) at depths ranging from 20 to 30 cmbs (7.8 to 11.8 inbs), and it appears to represent an infiltrated find. Situated in the eastern portion of the proposed buried cable easement, this locus measured approximately 1 x 1 m (3.3 x 3.3 ft) in area (Figure 2). Locus 2 was identified at an approximate elevation of 44 m (145 ft) NGVD. Vegetation throughout the vicinity of Locus 2 consisted of manicured lawns and apple trees associated with Holmberg Orchards (Figure 12).

A typical shovel test excavated within the confines of Locus 2 extended to a depth of 50 cmbs (19.7 inbs) and it exhibited two strata in profile. Stratum I consisted of a layer of dark brown (10YR 3/3) sandy loam that extended from the surface to 20 cmbs (0 to 7.8 inbs). Stratum II was described as a deposit of dark yellowish brown (10YR 4/6) loamy sand mixed with gravel; it continued from 20 to 50 cm (7.8 to 19.7 in) below surface.

As a result of survey, it was determined that Locus 2, because it lacked substantial amounts of cultural material and evidence if intact deposits, did not possess research potential. Thus, this historic non-site cultural resources locus also was assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional testing of Locus 2 is recommended.

#### 8.0 Summary and Management Recommendations

Heritage Consultants, LLC, completed the field investigation portion of this project, performed on behalf of EBI Consulting, Inc., on November 27, 2005. Phase I cultural resources reconnaissance survey of the proposed project items resulted in the identification of two non-site cultural resources loci (Locus I and Locus 2); however, both loci were found to lack intact cultural deposits, cultural features, research potential, and the qualities of significance applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). As result, it was determined that the planned construction will not impact any potentially significant or significant cultural resources. Thus, no additional testing of the Areas of Potential Effect is recommended at this time. However, should project plans be altered to include areas not covered by the current investigation, additional survey work, including subsurface testing should be completed.

#### REFERENCES CITED

#### Barber, J. W.

1836 Connecticut Historical Collections. 2<sup>nd</sup> ed. Facs. ed., Storrs, Connecticut, Hanover, N.H., Bibliopola Press, 1999; Distributed by the University Press of New England.

#### Bell, J. W., C. E. Smith, eds.

1976 Historic Ledyard. Volume I: Gales Ferry Village. Ledyard, Connecticut: Ledyard Historic District Commission.

#### Bellantoni, N.

1987 Faunal Resource Availability and Prehistoric Cultural Selection on Block Island, Rhode Island. Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

#### Bendremer, J.

1993 Late Woodland Settlement and Subsistence in Eastern Connecticut. Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

#### Bendremer, J. and R. Dewar

1993 The Advent of Maize Horticulture in New England. In Corn and Culture in the Prehistoric New World Ed. by S. Johannessen and C. Hastorf. Westview Press, Boulder.

#### Bendremer, J., E. Kellogg and T. Largy

1991 A Grass-Lined Storage Pit and Early Maize Horticulture in Central Connecticut. North American Archaeologist 12(4):325-349

#### Campisi, Jack

The Emergence of the Mashantucket Pequot Tribe, 1637-1975. Chapter 8 in Laurence M. Hauptman and James D. Wherry, eds., *The Pequots in Southern New England: The Fall and Rise of an American Indian Nation*. Norman, Oklahoma: University of Oklahoma Press.

#### Crofut, F. S. M.

1937 Guide to the History and the Historic Sites of Connecticut. New Haven, Connecticut, Yale University Press.

#### Curren, M.L., and D.F. Dincauze

1977 Paleo-Indians and Paleo-Lakes: New Data from the Connecticut Drainage. In *Amerinds* and their Paleoenvironments in Northeastern North America. Annals of the New York Academy of Sciences 288:333-348.

#### Dincauze, Dena F.

- 1974 An Introduction to Archaeology in the Greater Boston Area. Archaeology of Eastern North America 2(1):39-67.
- 1976 The Neville Site 8000 Years at Amoskeag. Peabody Museum Monograph No. 4. Cambridge, Massachusetts.

- Funk, R.E.
  - 1976 Recent Contributions to Hudson Valley Prehistory New York State Museum Memoir 22. Albany.
- George, D.
  - 1997 A Long Row to Hoe: The Cultivation of Archaeobotany in Southern New England.

    Archaeology of Eastern North America 25:175 190.
- George, D. and C. Tryon
  - 1996 Lithic and Raw Material Procurement and Use at the Late Woodland Period Cooper Site,
    Lyme, Connecticut. Paper presented at the joint meeting of the Archaeological Society of
    Connecticut and the Massachusetts Archaeological Society, Storrs Connecticut
- Gramly, R. Michael, and Robert E. Funk
  - What is Known and Not Known About the Human Occupation of the Northeastern United States Until 10,000 B. P. Archaeology of Eastern North America 18: 5-32.
- Griffin, J.B.
  - 1967 Eastern North America Archaeology: A Summary. Science 156(3772):175-191.
- Hughes, A. S. and M. S. Allen
  - 1976 Connecticut Place Names. Hartford, Connecticut: The Connecticut Historical Society.
- Jones, B.
  - The Late Paleo-Indian Hidden Creek Site in Southeastern Connecticut. Archaeology of Eastern North America 25:45-80.
- Lavin, L.
  - Analysis of Ceramic Vessels from the Ben Hollister Site, Glastonbury, Connecticut.

    Bulletin of the Archaeological Society of Connecticut 43:3-46.
  - 1984 Connecticut Prehistory: A Synthesis of Current Archaeological Investigations.

    \*\*Archaeological Society of Connecticut Bulletin 47:5-40.\*\*
  - 1986 Pottery Classification and Cultural Models in Southern New England Prehistory. North American Archaeologist 7(1):1-12.
  - The Windsor Ceramic Tradition in Southern New England. North American Archaeologist 8(1):23-40.
  - 1988a Coastal Adaptations in Southern New England and Southern New York. Archaeology of Eastern North America, Vol.16:101-120.
  - 1988b The Morgan Site, Ricky Hill, Connecticut: A Late Woodland Farming Community in the Connecticut River Valley. Bulletin of the Archaeological Society of Connecticut 51:7-20.
- Lizee, J.
  - 1994a Prehistoric Ceramic Sequences and Patterning in southern New England: The Windsor Tradition. Unpublished Ph.D. dissertation, Department of Anthropology, University of Connecticut, Storrs.

1994b Cross-Mending Northeastern Ceramic Typologies Paper presented at the 1994 Annual Meeting of the Northeastern Anthropological Association, Geneseo, New York

#### McBride, K.

1984 Prehistory of the Lower Connecticut River Valley Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

#### Moeller, R.

1980 6-LF-21: A Paleo-Indian Site in Western Connecticut. American Indian Archaeological Institute, Occasional Papers No. 2.

#### Pfeiffer, J.

- Bashan Lake:4500 Years of Prehistory. Archaeological Society of Connecticut Bulletin 46:45-53.
- The Late and Terminal Archaic Periods in Connecticut Prehistory. Bulletin of the Archaeological Society of Connecticut 47:73-88.
- Dill Farm Locus I: Early and Middle Archaic Components in Southern Connecticut.

  Archaeological Society of Connecticut Bulletin 49:19-36.
- The Late and Terminal Archaic Periods in Connecticut Prehistory: A Model of Continuity. In Experiments and Observations on the Archaic of the Middle Atlantic Region R. Moeller, ed.

#### Poirier, David A.

1987 Environmental Review Primer for Connecticut's Archaeological Resources. Connecticut Historical Commission, State Historic Preservation Office, Hartford, Connecticut.

#### Pope, G.

The Pottery Types of Connecticut. Bulletin of the Archaeological Society of New Haven 27:3-10.

#### Ritchie, W.A.

- 1969a The Archaeology of New York State. Garden City: Natural History Press.
- 1969b The Archaeology of Martha's Vineyard. A Framework for the Prehistory of Southern New England, A study in Coastal Ecology and Adaptation. Garden City: Natural History Press

#### Ritchie, W.A., and R.E. Funk

1973 Aboriginal Settlement Patterns in the Northeast. New York State Museum Memoir 20. The State Education Department, Albany.

#### Rouse, L.

1947 Ceramic Traditions and sequences in Connecticut. Bulletin of the Archaeological Society of Connecticut 21:10-25.

#### Salwen, B., and A. Ottesen

1972 Radiocarbon Dates for a Windsor Occupation at the Shantok Cove Site. *Man in the Northeast* 3:8-19.

Smith, C.

An Outline of the Archaeology of Coastal New York. Bulletin of the Archaeological Society of Connecticut 21:2-9.

Snow, D.

1980 The Archaeology of New England. Academic Press, New York.

Svirsky, Alexander

2004 <u>National Bridge Inventory.</u> Online resource, accessed 12/07/2005. <a href="http://shawsheen.com/nbi\_result.php?StateCode=09&RouteNumber=12">http://shawsheen.com/nbi\_result.php?StateCode=09&RouteNumber=12</a>

Turner, G. M., and M. W. Jacobus, et al.

1989 Connecticut Railroads: An Illustrated History. Hartford Connecticut, Connecticut Historical Society.

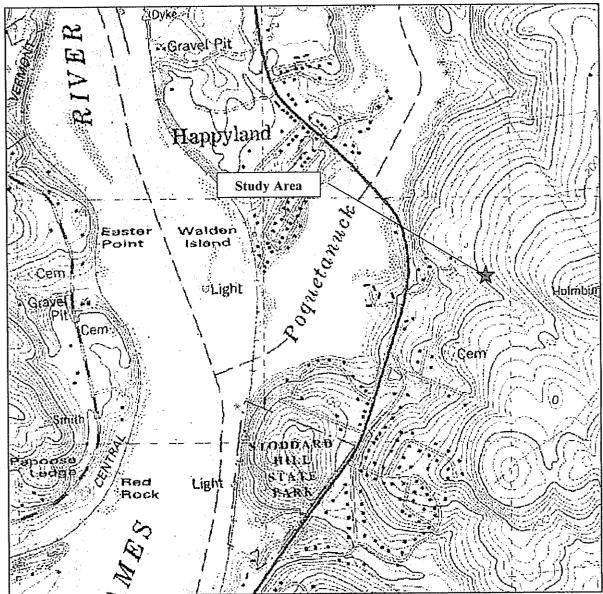


Figure 1. Excerpt from the 1989 digital 7.5' series USGS topographic quadrangle, Uncasville, Connecticut, depicting the location of the Areas of Potential Effect.

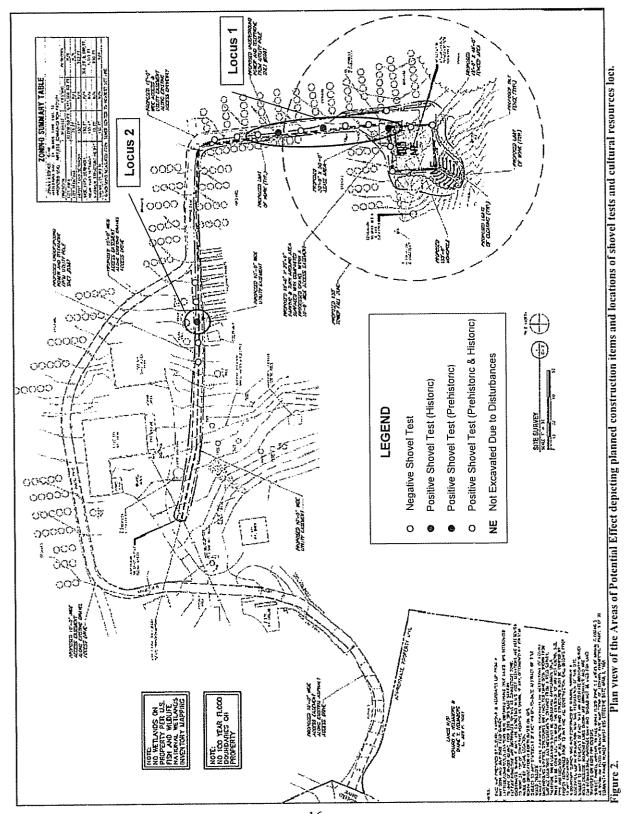




Figure 3.

Overview photo of the proposed lease area, facing southwest (note: this area contains the southern extent of Locus 1 in the vicinity of the stake marking the northeast corner of the proposed lease area).



Figure 4. Overview photo of the proposed lease area, facing northwest.

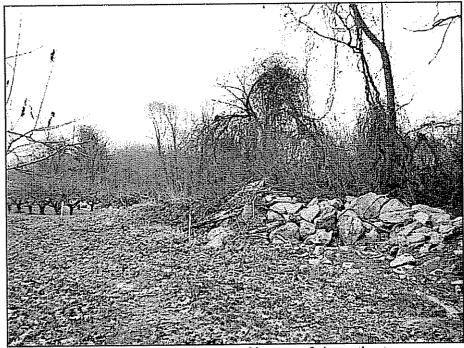


Figure 5. Overview photo of the proposed lease area, facing southeast.



Figure 6. Overview photo of the proposed lease area, facing northeast.

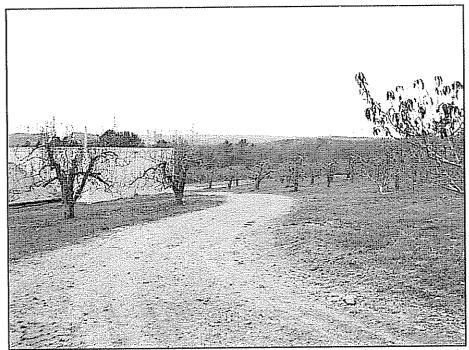


Figure 7. Overview photo of the east central portion of the proposed access road, facing northwest.

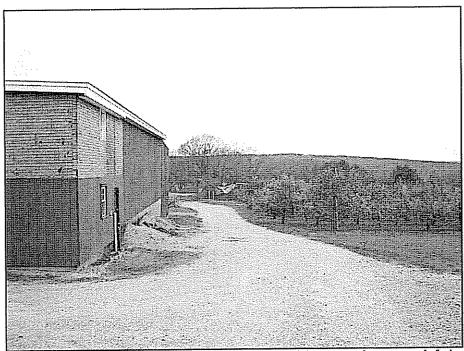


Figure 8. Overview photo of the central portion of the proposed access road, facing west.



Figure 9. Overview photo of the west central portion of the proposed access road, facing south.

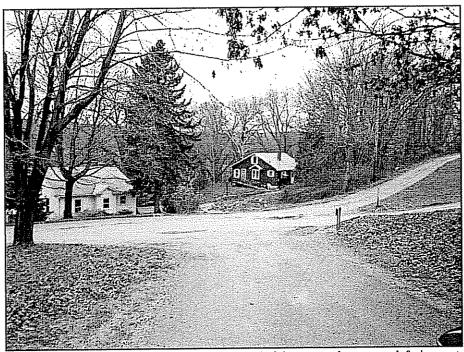


Figure 10. Overview photo of the western end of the proposed access road, facing west.

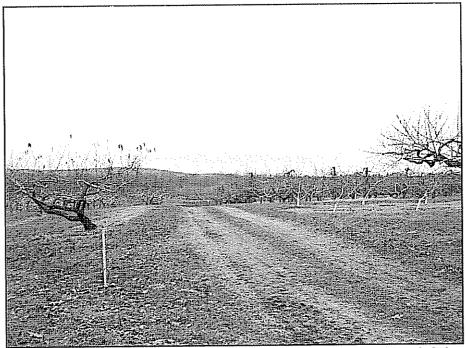


Figure 11. Overview photo of the eastern end of the proposed access road, facing north (note: this area contains Locus 1).

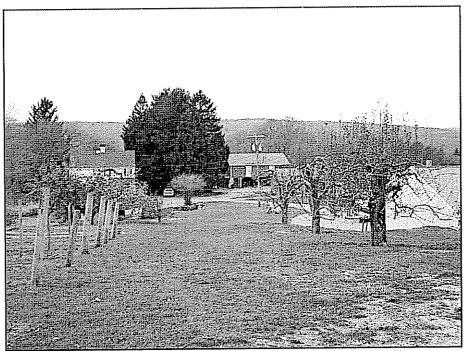


Figure 12. Overview photo of the western half of the proposed buried utility easement, facing west (note: this area contains Locus 2).

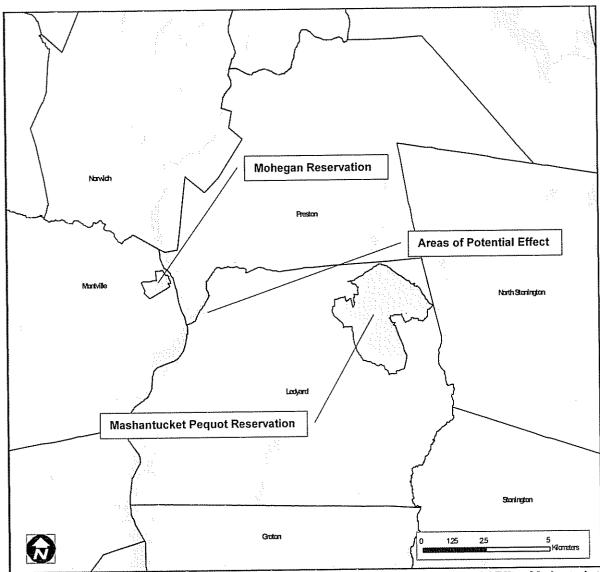


Figure 13. Digital map of the project region depicting the locations of the Areas of Potential Effect, Mashantucket Pequot Reservation and Mohegan Reservation.

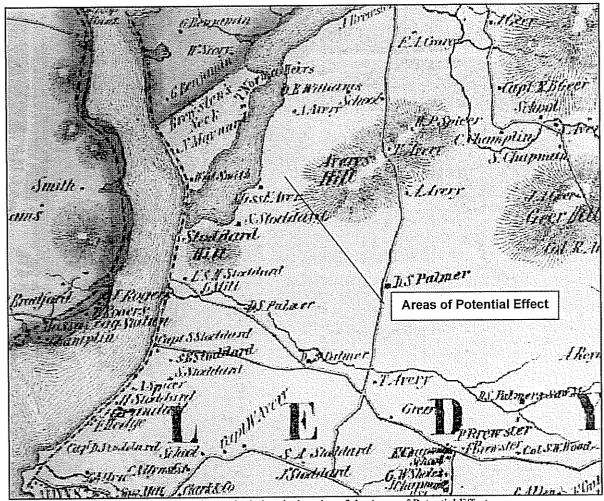


Figure 14. Excerpt from an 1854 map depicting the location of the Areas of Potential Effect.

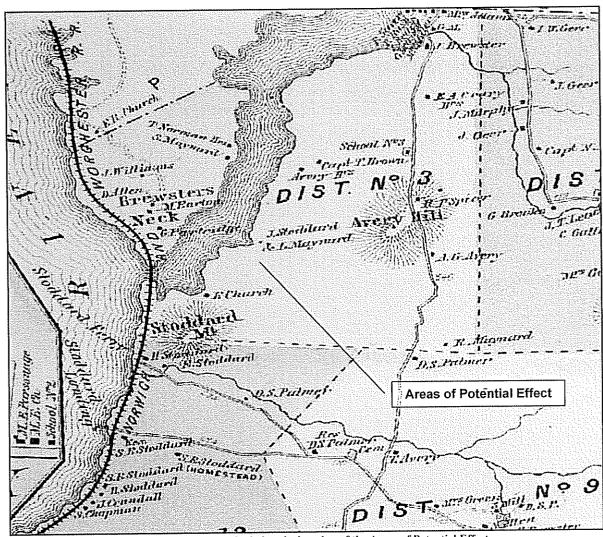


Figure 15. Excerpt from an 1868 map depicting the location of the Areas of Potential Effect.

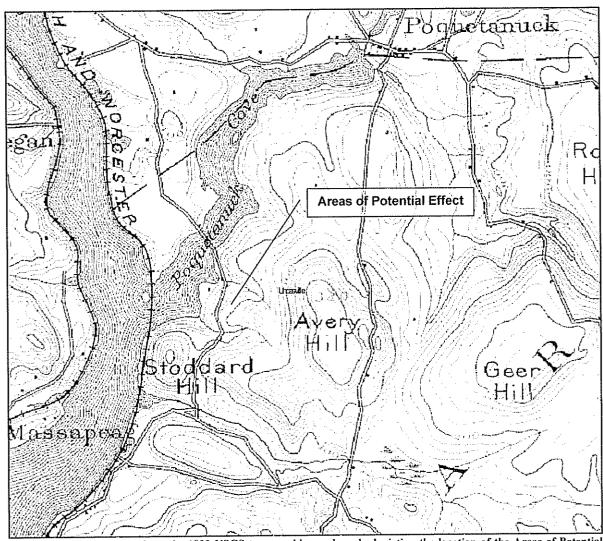


Figure 16. Excerpt from the 1892 USGS topographic quadrangle depicting the location of the Areas of Potential Effect.

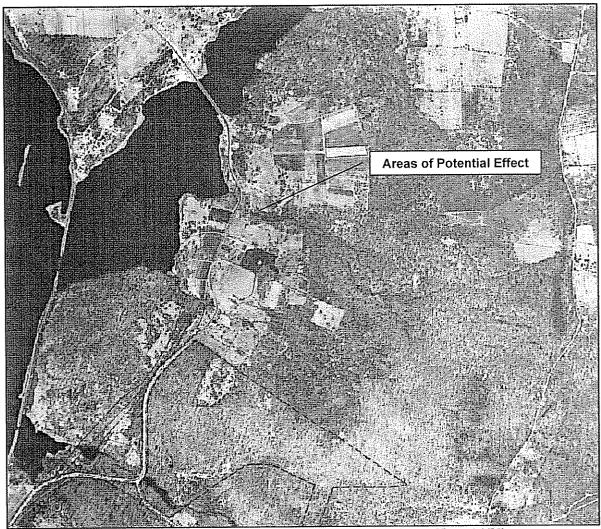


Figure 17. Excerpt from a 1934 aerial image depicting the location of the Areas of Potential Effect.

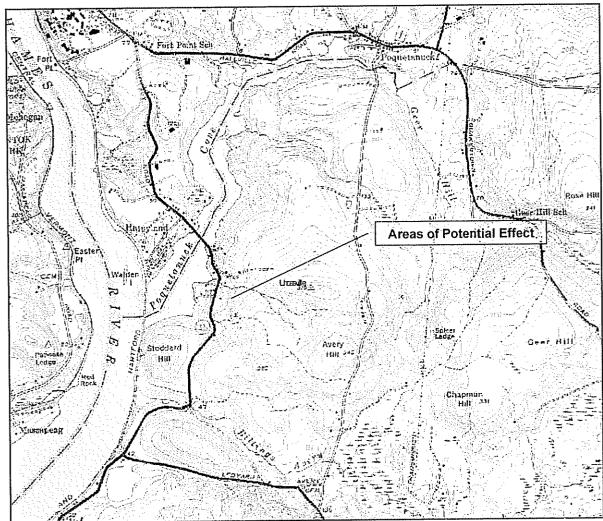


Figure 18. Excerpt from the 1941 USGS topographic quadrangle aerial image depicting the location of the Areas of Potential Effect.

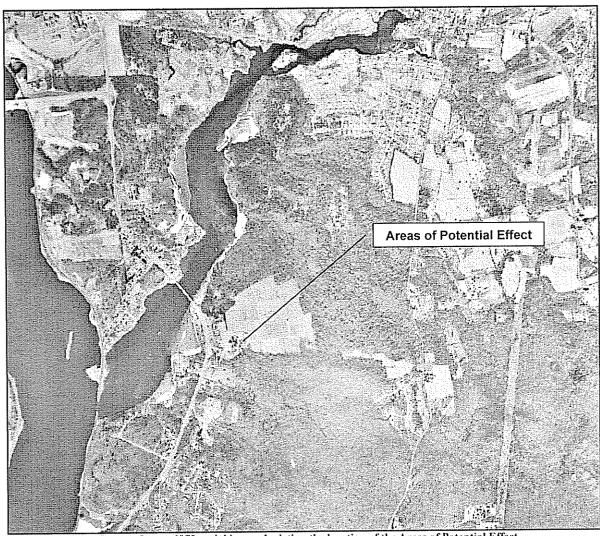


Figure 19. Excerpt from a 1970 aerial image depicting the location of the Areas of Potential Effect.

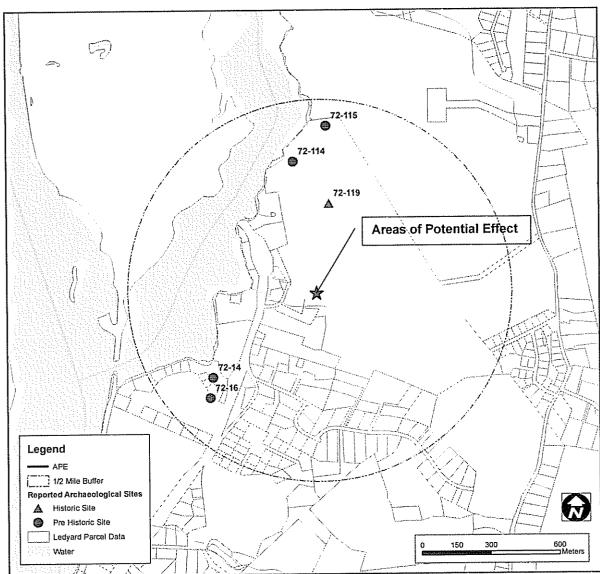


Figure 20. Digital map of the project region depicting the location of previously recorded archaeological sites.

APPENDIX E
TRIBAL CORRESPONDENCE



12-12-05

Ms Catherine M. Labadia, M A President & Principal Investigator Heritage Consultants. LLC 877 Main St Newington, Ct. 06111

RE: Phase I Cultural Resources Reconnaissance Survey of a Proposed Cellular Communications Facility at 12 Orchard Dr., Ledyard, Ct

Dear Ms Labadia.

Thave reviewed the Phase I Archaeological Reconnaissance Report entitled "Phase I Cultural Resources Reconnaissance Survey Of A Proposed Cellular Communications Facility At 12 Orchard Dr., Ledyard, Ct.", submitted by Heritage Consultants, LLC. The research design and testing strategy meets acceptable professional standards, and agree with the recommendations and conclusions

Please keep me informed of any further developments with respect to this project.

Sincerely,

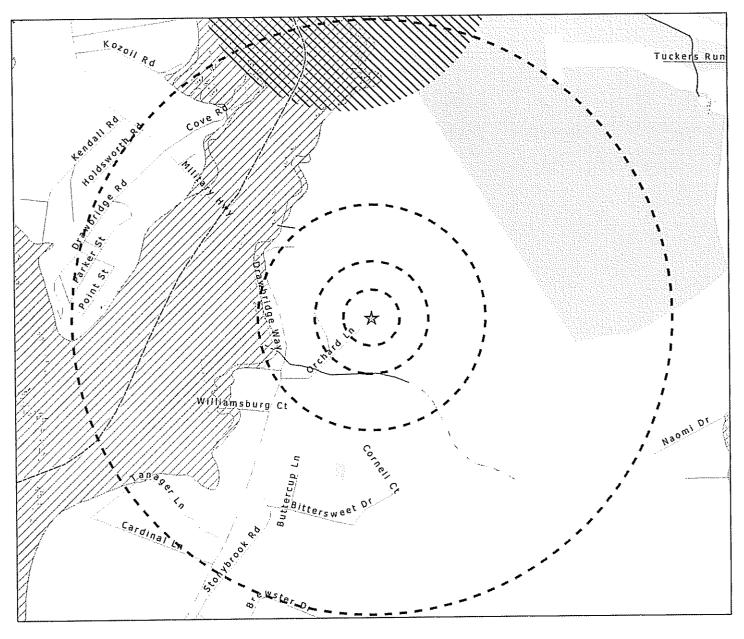
Kathleen Knowles,

Tribal Historic Preservation Officer

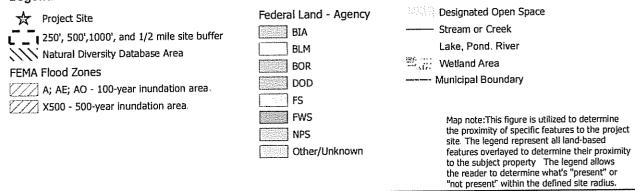
Tathlen Knowlas

Mashantucket Pequot Tribe

APPENDIX F
LAND RESOURCES MAP



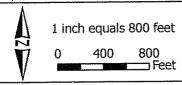
#### Legend





**Land Based Resources** 

Holmberg Orchard/CT11841B 12 Orchard Drive Ledyard, CT 06335



Source: Selected data from MAGIC, CT DEP, NWI and EBI. PH: 61052371

APPENDIX G
UNITED STATES FISH AND WILDLIFE CORRESPONDENCE



# United States Department of the Interior

# FERRI LA LIVE

#### FISH AND WILDLIFE SERVICE

New England Field Office 70 Commercial Street, Suite 300 Concord, New Hampshire 03301-5087

April 29, 2004

REF: Locations:

Telecommunication towers

New Canaan, CT (CT-11-098-B), West Haven, CT (CT-11-492-C, CT-11-492-B)

Trumbull, CT (CT-11-836-A), Gales Ferry, CT (CT-11-469-C), Tolland, CT (CT-11-498-A)

Ledyard, CT (CT-11-841-B), Madison, CT (CT-11-443-C, CT-11-443-B)

Hamden, CT (CT-11-496-B), Wilton, CT (CT-11-345-D), Cranston, RI (4PR-0217-B) Warwick, RI (4PR-0270-A), No. Providence, RI (4PR-0246-B), Dudley, MA (4WL-0901-C)

Christine Keating
Lessard Environmental, Inc
1920 Mineral Spring Ave, Suite 9/10
North Providence, RI 02904

Dear Ms. Keating:

This responds to your recent correspondence requesting information on the presence of federally-listed and/or proposed endangered or threatened species in relation to the proposed activity(ies) referenced above.

Based on information currently available to us, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required

This concludes our review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

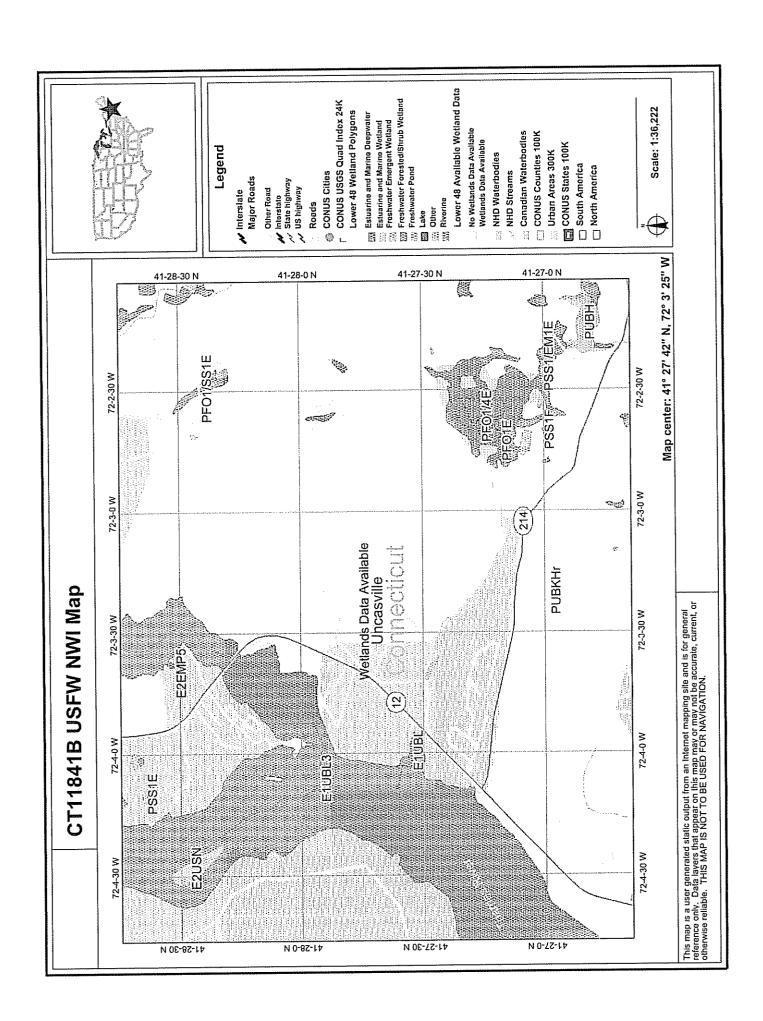
Thank you for your coordination. Please contact us at 603-223-2541 if we can be of further assistance.

Sincerely yours,

mishael J. amaral

Michael J Amaral Endangered Species Specialist New England Field Office APPENDIX H

National Wetlands Inventory Map and Tree Inventory Report





August 02, 2005

Mr. Bryan Bakis, P.E. T-Mobile USA, Inc. 50 Vision Boulevard East Providence, RI 02914

RE: Tree Inventory

Site: CT-11-841B, Holmberg Orchard Rawland

12 Orchard Drive Ledyard, CT 06335 CHA # 10585-1065-1601

Dear Mr. Bakis:

A tree inventory was completed at the subject site on July 22, 2005 to determine the size and quantity of existing trees that would need to be removed for installation of the proposed facility and access road. The site will be placed within an existing wooded area with average tree heights of approximately 60 feet. The 50' x 50' lease area will require removal of three 8" diameter trees, three 12" diameter trees, and one 36" diameter tree. Also, light brush would be cleared in the compound area. A tree buffer will remain around all sides of the proposed facility. The portion of the access road which runs through the woods to the compound will not require removal of large trees. Additional light brush would be removed for installation of the access road.

Very truly yours,

CLOUGH HARBOUR & ASSOCIATES LLP